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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,546	02/08/2002	Shenheng Guan	98-13DIV2	9873

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EXAMINER

HANDY, DWAYNE K

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/071,546	Applicant(s) GUAN ET AL.	
	Examiner Dwayne K. Handy	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 61-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 61-88 is/are rejected.
- 7) ☒ Claim(s) 76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 61-88 are currently pending in the application.

Claim Objections

2. Claim 76 is objected to because of the following informalities:

The Examiner believes claim 76 to be a duplicate of claim 61. Claim 76 depends, alternatively, from either claim 62 or claim 63. It also contains the limitation of "the plurality of flow restrictors provide fluid communication between the entrance control volume and one of the plurality of vessels". This limitation places the flow restrictors "upstream of the vessels" as required in claim 61. Therefore, the version of claim 76 that depends from claim 63 is a duplicate of claim 61. Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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4. Claims 61-88 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No. 6,149,882. Although the conflicting claims are not identical, they are not patentably distinct from each other. The various independent claims from the patent recite an apparatus comprised of a plurality of reaction vessels, a detector, and a fluid handling system. The fluid handling system is comprised of an entrance control volume, an exit control volume, and a plurality of flow restrictors. The flow restrictors may be placed between the entrance control volume and the reactor (i.e. upstream of the reactor) or between the exit control volume and the reactor (i.e. downstream). The flow restrictors provide a resistance to fluid flow that is greatest in the restrictors and equal across the restrictors. Claim 16 recites the use of capillary channels or micromachined channels. The Examiner believes these features encompass the independent instant claims. As for the limitations recited in the dependent instant claims, the following list discloses where the dependent limitations of the instant claims may be found in the patented claims:

Claim 1 (of '882) recites a sample probe. It would be obvious to one of ordinary skill in the art to provide a plurality of probes in order to sample a greater amount of material. Claim 7 recites a selection valve, a bypass valve, a sampling valve, and outlet conduits. Claim 8 recites a fluid distribution valve. Claims 9-11, 17 and 30 recite a base and cover block for forming the apparatus. Claims 10 and 11 include inlet and outlet ports in the block. Claims 18 and 19 recite pressure regulators in the entrance and exit control volumes. Claim 43 recites a gas handling system. Claim 44 recites a

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liquid handling system. Claims 26-28 recite a temperature regulation system. Claim 29 recites detectors. Claim 49 teaches catalyst use in the reactors. It would have been obvious to one of ordinary skill in the art to use different catalysts in each reactor. This would allow for the testing of a greater number of catalysts.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 62, 63, 70, 77 and 79-87 are rejected under 35 U.S.C. 102(a) as being anticipated by Windhab et al. (WO 98/07026). The Examiner believes applicant is familiar with the Windhab reference at this point. This reference was applied to claims 63, 70, 77 and 79-88 in the previous Office Action (mailed 1/25/2005). It has now been applied to claim 62 as well. Please see Response to Arguments below.

Response to Arguments

7. Applicant's arguments, filed 4/20/2005, with respect to the objection of claims 61, 62, 64 and 66-88 have been fully considered and are persuasive. The objection of claims 61, 62, 64 and 66-88 has been withdrawn. The Examiner previously objected to claims 61 and 62 as duplicates of one another. This appears to have been an error by the Examiner. The Examiner agrees with applicant that while independent claims 61,

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62 and 63 are similar, they are distinct from each other. The Examiner now objects to claim 76 for the reasons given in paragraph 2 above.

8. Applicant's arguments, filed 4/20/2005, with respect to the rejection of claims 74 and 75 under Windhab and Milberger have been fully considered and are persuasive.

9. Applicant's arguments, filed 4/20/2005, with respect to the rejection of claims 62, 63, 70, 77 and 79-88 under the reference "Windhab" have been fully considered but are not persuasive for claims 62, 63, 70, 77 and 79-87. Applicant's arguments are directed at the limitations placed on the flow restriction devices of the claimed fluid handling system. This includes the flow restrictors being adapted such that the **resistance to fluid flow in the device is greatest in the flow restrictors** and being adapted such that the **resistance to fluid flow in the restrictors is approximately the same for each restrictor**. Applicant has argued that these features are not present in Windhab. The Examiner respectfully disagrees.

The Examiner believes that since the bored channel (10) has a smaller diameter (2.5 mm) than the reactor (2) and the cuvette/examination hole (11), then it must follow that the bored channel (10) has a greater resistance to flow than those other elements in the device. Given that there is no other mechanism for controlling or stopping fluid flow in the block, the Examiner believes this passage will have the highest resistance to fluid flow in the block. It has the smallest diameter of the passages in the block. In addition, since the bored channel (10) has the same diameter for each reactor, the

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resistance in the channels would be approximately the same since it is the change in diameter that is providing the flow resistance.

Applicant has argued that the addition of the catalyst to the reactor of Windhab would alter the actual fluid flow through the reactor. This altered fluid flow would be a diminished fluid flow caused by a resistance to flow through the catalyst bed. Applicant then argues that the diminished flow in the reactor makes it impossible to tell whether the resistance to flow would then be greatest in the reactor or the bored channel. This is a spurious argument for most of the claims rejected under Windhab since almost all of the rejected claims **do not actually require a catalyst in the reactor**. These claims merely recite a reaction vessel adapted for receiving the catalyst. They do not require a catalyst. The Examiner believes that the system of Windhab – without having catalyst beds in the reactors – still meets the flow restrictor limitations discussed above due to the difference in diameter between the bored channel (10) and the reactor (2). In other words, the Examiner believes that until a catalyst is placed into the reactor, the reduced diameter of the channel bore (10) would control, or resist, fluid flow more than the empty reactor solely on the difference in diameter. The rejection of claim 88, however, **has been removed in response to this argument**. This claim specifically recites a fixed catalyst bed in the reactor. The Examiner agrees with applicant that once a **fixed catalyst bed is** placed into the reactor it is no longer possible to determine whether or not the fluid flow resistance would be higher in the reactor or in the bored chamber (10) of Windhab. The presence of a fixed catalyst bed could alter the fluid flow through the

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reactor such that resistance to fluid flow in the reactor would be greater than the resistance in the flow restrictors.

Conclusion

10. The Examiner notes that some claims were objected to in the previous action, but indicated as allowable if amended to include the limitations of the base claim. This is no longer the case given the new rejection(s) applied in this Office Action.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K. Handy whose telephone number is (571)-272-1259. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKH
July 6, 2005


Jill Warden
Supervisory Patent Examiner
Technology Center 1700